

REMARKS

Introduction

Claims 1 – 8 were originally pending in the present application. Claims 1, 4, and 7 have been amended herein. No new matter has been added. Accordingly, claims 1 – 8 are presently pending for consideration in this application.

Amendments to the Specification

Paragraph 41 of the written description was amended to correctly designate the conductive member with reference numeral 86. Attorney for applicants apologizes for this typographical error.

Drawings

The drawings were objected to because the reference numeral “42” was used to designate different elements in Figure 1 of the drawings. In connection with reviewing the drawings in response to this objection, applicants also noted that reference numerals 22 and 24 should be interchanged on Figure 1 to correctly identify the inboard and outboard sides of the seat cushion 16. Accordingly, submitted herewith, please find a replacement sheet where reference numerals 22 and 24 properly designate the inboard and outboard side of the seat cushion. In addition, reference numeral 44 has been used to designate the low profile sensor assemblies.

Double Patenting

Claims 1 - 2, 4 - 5 and 7 - 8 were provisionally rejected under the judicially created doctrine of obvious-type double patenting as being unpatentable over claims 1 - 3 and 7 - 9 of co-pending application having U.S. Serial No. 10/749,154. While applicants acknowledge that this rejection is

provisional because the conflicting claims have not in fact been patented, applicants also note that the ‘154 application and the present application under consideration were both filed on the same day: December 30, 2003. Thus, the life of any patents issued from these applications would be measured as twenty years from December 30, 2003, assuming that all maintenance fees were paid. Accordingly, the double patenting rejection does not appear appropriate in this case and applicants respectfully traverse this provisional rejection.

Claim Rejections

35 U.S.C. § 102(e)

Claims 1 – 8 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. US2005/0093276 to Hayes et al. A claim is said to be anticipated where each and every limitation of the claim can be found in a single reference. Independent claims 1, 4, and 7 have amended to include additional limitations directed toward the structure of the low profile sensor assembly. Applicants respectfully submit that the Hayes et al. publication fails to disclose or suggest each element of the present invention as defined by the amended independent claims. Accordingly, the rejection of these claims based on 35 U.S.C. § 102(e) is respectfully traversed for the reasons set out below.

The Hayes et al ‘276. publication

The Hayes et al. publication discloses a vehicle safety restraint system 12 having air bags 16 and 17, a controller 14, and a seat sensor device 20. The seat sensor device 20 includes a printed circuit 22 a frame 24, and a plurality of Hall effect sensor assemblies 26. Each Hall effect sensor assembly 26 includes a housing 44 having a first and second housing members 52 and 54, a Hall

effect sensor 46, a magnet 48, and a spring 50. The first housing member 52 has a base 56 and a tube section 58 comprised of two opposing curved columns 68. The columns 68 define an open area 70 and alignment slots 72 that slidingly receive the second housing member 54. The Hall effect sensor 46 is molded into the base 56. The second housing member 54 is also tube shaped with a hollow tube section 84 having a closed end top section 86. The magnet 48 is held within the hollow tube section 84 and is held upwardly in place against the closed top section 86 by the spring 50.

The Hall effect sensor 46 has three electrical leads 78 that are exposed through the bottom of the base 56. Terminals 94 are used to electrically and mechanically connect the sensor 46 to the printed circuit 22.

However, the Hayes et al. publication fails to disclose or suggest a vehicle occupant sensing system for detecting a condition of a vehicle seat employing at least one low profile sensor assembly having a housing that includes *a base, an upper slide member, and at least one intermediate guide member disposed between the upper slide member and the base*, where the upper slide member and the intermediate guide member are supported for movement toward and away from the base in response to movement of said vehicle seat, and at least one sensor is operatively supported by the circuit carrier and fixed relative to the upper slide member and the base. The sensor is operable to detect movement of the upper slide member toward and away from the base as defined in amended independent claim 1 of the present invention.

Further, the Hayes et al. publication fails to disclose or suggest the structure described above in connection with a vehicle seat as defined in amended independent claim 4 of the present invention.

In addition, the Hayes et al. publication fails to disclose or suggest a method of manufacturing a vehicle occupant sensing system for detecting a condition of a vehicle seat that

utilizes a low profile sensor assembly described above where the upper slide member and the base, the upper slide member and the intermediate guide member are supported for movement toward and away from the base in response to movement of the vehicle seat, and sensor is operable to detect movement of the upper slide member toward and away from the base as defined in amended independent claim 7 of the present invention.

The Vehicle Seat Assembly of the Present Invention

In contrast to the related art, amended claim 1 of the present application discloses a vehicle occupant sensing system for detecting a condition of a vehicle seat that includes a circuit carrier and an electric circuit supported by the circuit carrier. The electric circuit presents a plurality of leads. The system also includes at least one low profile sensor assembly having a housing that includes *a base, an upper slide member, and at least one intermediate guide member disposed between the upper slide member and the base*. The upper slide member and the intermediate guide member are supported for movement toward and away from the base in response to movement of the vehicle seat. At least one sensor is operatively supported by the circuit and fixed relative to the upper slide member and the base and operable to detect movement of the upper slide member toward and away from the base. The sensor includes a plurality of terminals corresponding to the plurality of leads presented by the electric circuit. A plurality of conductive connectors are associated with the corresponding plurality of terminals and leads. The conductive connectors each include a body disposed for electrical communication with the associated terminal and at least one deformable blade extending into the circuit carrier and into electrical communication with the associated lead of the electric circuit. In this way, the conductive connector are mechanically attached to the circuit carrier while providing electrical communication between the sensor and the electric circuit.

Similarly, amended claim 4 is directed toward a vehicle seat including a lower seat cushion, a circuit carrier disposed adjacent to the lower surface of the lower seat cushion, and an electric circuit supported by the circuit carrier. The electric circuit presents a plurality of leads. In addition, claim 4 has been amended to recite the structure concerning the low profile sensor assembly that includes a housing having a base, upper slide member and at least one intermediate guide member as discussed in greater detail above. Likewise, independent claim 7 has been amended in a similar manner.

Argument

Applicants respectfully submit that the Hayes et al. publication fails to disclose or suggest the invention described in claims 1, 4, and 7, as amended. Specifically, the Hayes et al. Hall effect sensor assembly fails to disclose or suggest a vehicle occupant sensing system or a vehicle seat having a low profile sensor assembly with a base, an upper slide member, and at least one intermediate guide member, wherein the upper slide member and the intermediate guide member are supported for movement toward and away from the base, in response to movement of the vehicle seat as described in claims 1 and 4.

Similarly, the Hayes el al. publication fails to disclose or suggest a method of manufacturing a vehicle occupant sensing system that employs a low profile sensor assembly having a housing that includes a base, an upper slide member, and an intermediate guide member disposed between the upper slide member and the base, where the upper slide member and the intermediate guide member are supported for movement toward and away from the base in response to movement of the vehicle seat as described in claim 7.

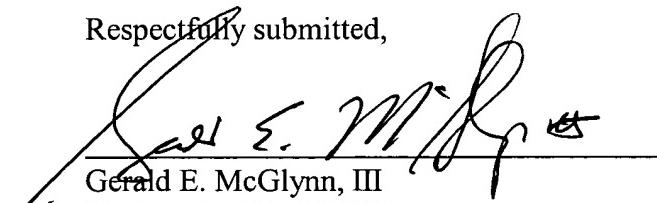
Thus, the Hayes reference fails to disclose or suggest the invention of amended claims 1, 4, and 7 of the present application. Claims 2 and 3 are each ultimately dependent upon claim 1; claims

5 and 6 are each ultimately dependant on claim 4; and claim 8 is ultimately dependant on claim 7. Each of the dependant claims adds perfecting limitations to their respective independent claim. As such, the Hayes et al. publication, standing alone or in combination with any other reference, does not disclose or suggest the subject invention and, even if it did, it could only be applied through hindsight after restructuring the disclosure of the prior art and in view of applicants' invention. A restructuring of the Hall effect sensor described in the Hayes et al. publication to derive applicants' invention would, in and of itself, be an invention.

Conclusion

In view of the above, applicants respectfully submit that the claims clearly distinguish over the prior art and are therefore allowable. Accordingly, applicants respectfully solicit the allowance of the claims pending in the present application.

Respectfully submitted,



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